

Remarks

Applicants have amended claim 5. Claims 5 and 44-57 remain in the application, and Applicants respectfully request reconsideration of the amended claims.

Claim 5 is amended to recite a cover glass with a thickness of at least 0.85 mm and an area between the spacer bars of at least 500 mm. The recited cover glass thickness is within the range described at page 8, line 3; and the area is within the range of length and width dimensions discussed on page 6, lines 26-30. The following remarks are with respect to the amended claim 5.

Claims 5 and 43-57 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. RE 35,589 to Fisch in view of U.S. Patent No. 4,171,866 to Tolles. Fisch relates to a hemocytometer for counting of cells in a liquid sample under magnification of a microscope using a grid etched into a slide cover. In Fig. 1, Fisch shows a slide 2 and slide covers 3, 3' separated by a film 23 and a separating wall 26. Slide cover 3 has a grid 38 of 100 squares being 0.1 mm on a side for a total area of 1 square mm. Further, a cylindrical sample chamber 74 shown in Fig. 4 has a diameter of 16 mm and an area of about 200 square mm. The slide and cover glass combination of Fisch is used to count cells under a microscope through the slide cover. Thus, the area of the counting grid is small, so that the counting process is easier, and the slide cover is a transparent glass that is 0.1-0.5 mm thick. The thinner cover glass minimizes distortion, light loss and facilitates microscopic examination.

Tolles relates to a hemocytometer, and the Office Action refers to the prior art device of Figs. 1 and 2, which has a glass base plate 11 with upwardly extending integral lands 12. A depth chamber 14 is formed with a counting grid 15 inscribed in the bottom of the chamber 14. A cover glass 13 is placed over the lands 12, and a number of blood cells is counted within the grid area 15. No size is recited for the glass base plate 11, but it must have a size facilitating microscopic examination; and thus, most probably, the base plate 11 is comparable in size to a disposable volumetric slide 18 of Fig. 3, that is, 25 mm x 75 mm x 1mm. Further, as shown in Fig. 1, the specimen areas 15 that are subject to

Application No. 10/021,602
Amendment dated June 14, 2006
Reply to Office Action of February 23, 2006

examination under the cover glass 13 are less than half the total area under the cover glass 13 and between the lands 12. Referring to Fig. 3, a comparable chamber 21 is about 36 square mm with a cover slip 20 width of 6 mm, col. 3, line 38.

In order to establish a *prima facie* case of obviousness, it is necessary that the Office Action present evidence, preferably in the form of some teaching, suggestions, incentives or inference in the applied prior art or, in the form of generally available knowledge, that one having ordinary skill in the art would have been led to arrive at the claimed invention.

Applicants submit that a *prima facie* case of obviousness is not made because the cited references in combination do not teach, suggest or motivate one to provide a hybridization apparatus having the elements recited in amended claim 5.

First, claim 5 requires a cover slip area of at least 500 square mm between the spacer bars and a thickness of at least 0.85 mm. In Fisch, the slide cover 3 is transparent glass in the range of 0.1 to 0.5 mm thick and provides a chamber of about 200 square mm. Applicants have found no recitations in Tolles regarding the prior art embodiments of Figs. 1 and 2 describing the size of the specimen area 15 or the thickness of the cover glass 13. There is no teaching, suggestion or motivation in either Fisch or Tolles to provide a cover glass of at least 0.85 mm thick with an area between the spacer bars of at least 500 square mm.

Second, as argued in Applicants' Amendment and Response of January 24, 2005, neither reference teaches, suggests or motivates one to provide "a pair of spacer segments attached to the bottom surface of the cover slip, each of the pair of spacer segments extending along substantially a full length of a different one of the opposed edges and forming a hybridization chamber between the spacer segments,"

As further argued in Applicants' Amendment and Response of January 24, 2005, Applicants further submit that a *prima facie* case of obviousness is not made because the cited references are directed to a different problem than the problem addressed by Applicants' invention. Both Fisch and Tolles are directed to a hemocytometer for precisely

Application No. 10/021,602
Amendment dated June 14, 2006
Reply to Office Action of February 23, 2006

counting cells under a microscope within a calibrated grid area through the cover glass. To minimize the counting time and effort, the counting grids are relatively small in area. Further, both Fisch and Tolles show the supporting structure for the cover glass to be inside its peripheral edges, which provides greater support around the counting grid and minimizes deflection over the counting grid.

However, in contrast to using a smaller area under the cover glass, Applicants place the supporting spacers along the cover slip edges to maximize the size of a hybridization chamber. The larger hybridization chamber of the claimed invention is contrary to the teaching of the references of a hemocytometer, which uses a smaller chamber for more efficient counting of cells. Further, the larger area of the chamber requires a thicker cover glass to prevent deflection due to fluid adhesion forces created by injecting a hybridization fluid beneath the cover slip, thereby providing more consistent and reliable hybridization reactions. The cover glass of the present invention is merely used to form the hybridization chamber and is not used to cover the specimen during microscopic examination or other viewing or inspection. There is no teaching within the present application regarding examination or observation of the specimen through the cover glass.

Applicants submit that Fisch and Tolles in combination do not express, suggest or motivate one to provide the structure for a hybridization chamber recited in claim 5. Therefore, Applicants submit that the combination of Fisch and Tolles fails to provide a *prima facie* argument of obviousness, and that claims 5 and 43-57 are patentable and not obvious under 35 U.S.C. §103(a) over Fisch in view of Tolles.

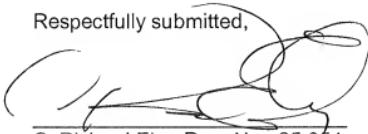
Applicants respectfully disagree with assertions made in the Response to Arguments in paragraph 3 of the Office Action and in particular, with the statement that "Applicants' specification defines standard cover slips as having thicknesses of 0.3-1 mm (pages 6-7). " Applicants' specification at page 7, lines 22-25 describe commercially available cover glass as having a range of nominal thicknesses of from 0.3-0.5 mm. At line 25, the specification further states that "In addition, the cover slip 22 can be made from a commercially available glass that is used to make microscope slides and that has a

Application No. 10/021,602
Amendment dated June 14, 2006
Reply to Office Action of February 23, 2006

nominal thickness of about 1.0 mm." Applicants submit that one skilled in the art and glass suppliers distinguish cover glass from microscope slides.

Applicants respectfully submit that the application is now in condition for allowance and reconsideration of the application is respectfully requested. The Examiner is invited to contact the undersigned in order to resolve any outstanding issues and expedite the allowance of this application.

Respectfully submitted,



A handwritten signature in black ink, appearing to read "C. Richard Eby".

C. Richard Eby, Reg. No. 25,854

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, OH 45202
(513) 241-2324
(513) 241-6234 (Facsimile)
reby@whepatent.com (Email)